

December 1993

**FY 1993 Services and Features Report: Period
Covered: October 1, 1992-September 31, 1993**

Annual Report 1993



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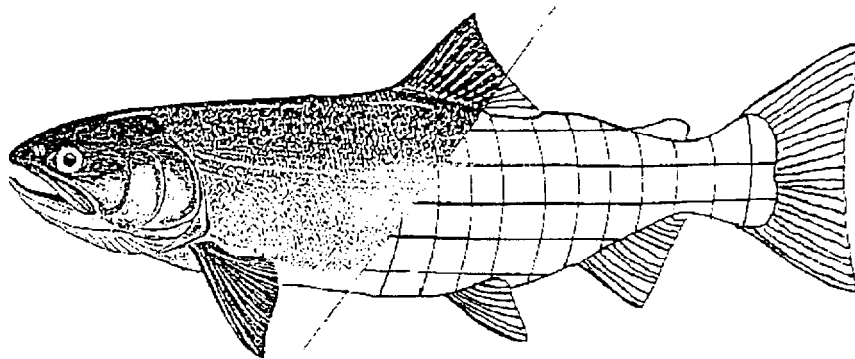
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Columbia River Coordinated Information System

FY 1993 Services and Features Report



**U.S. Department of Energy
Bonneville Power Administration
Division of Fish and Wildlife**

**Columbia River Inter-Tribal Fish Commission
Idaho Department of Fish and Game
National Marine Fisheries Service
Northwest Power Planning Council
Oregon Department of Fish and Wildlife
Pacific States Marine Fisheries Commission
Shoshone-Bannock Tribes
U.S. Fish and Wildlife Service
Washington Department of Fisheries
Washington Department of Wildlife**

FY 1993 Services and Features Report:

Period Covered:
October 1, 1992 - September 31, 1993

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INTRODUCTION

The goal of the Coordinated Information System (CIS) is to develop and provide an efficient system for obtaining and exchanging information needed to plan, monitor, and evaluate the protection, mitigation, and enhancement of anadromous **salmonid** populations in the Columbia River Basin. Since its inception, the development of CIS consisted of 1) building a team of people representing agencies that manage fisheries and natural resources in the Columbia River Basin, and developing an administrative framework to maintain, enhance, and distribute anadromous **salmonid** information to public and private resource managers and researchers; 2) assembling biological information on anadromous salmonids that could be used to evaluate system wide population dynamics; and 3) developing the technology to deliver the information provided by CIS. The CIS project is funded by Bonneville Power Administration (BPA).

To date, a number of services and features have been created and tested to meet the objectives of CIS. This report summarizes the services that are now available to information users, and describes the administration through which services are delivered. Services and features that will be further developed during the 1994 fiscal year are also described.

SERVICES AND FEATURES

Three principal components comprise the CIS information delivery services (Figure 1). Information summarized in a series of databases accessed by an interactive user interface can be obtained on diskettes and used on an IBM compatible personal computer. This information source is called the Distributed System. This system can be configured to meet the needs of groups of individuals with respect to the interface between the user and information, and the types of information included in the system.

CIS provides an electronic bulletin board service, "CISNET", which currently functions as a communication network between the developers of the CIS, and other anadromous fish researchers in the Columbia River Basin. CISNET is accessible through a PC with a modem.

Information needs which cannot be met through electronic means can be accommodated by contacting the people who administer the CIS. Information needs might include technical help in using the electronic information services, clarification of information in the Distributed System, or assistance in obtaining published or unpublished reports.

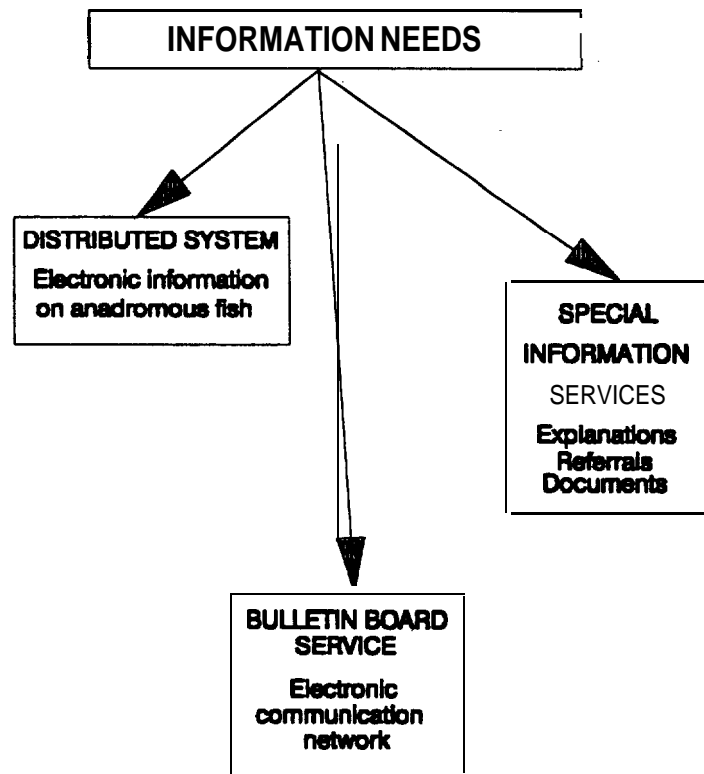


Figure 1. Principal components of the CIS information delivery system.

Distributed System

The Distributed System includes the "FrontEnd" or user interactive interface; the Anadromous Fish Information System (AFIS) consisting of quantitative biological data; and the Anadromous Fish Reference System (AFRS) containing documentation of the AFIS data and other information on sources of published and unpublished literature or data (Figure 2). The **FrontEnd** is a menu driven computer program that controls the applications that allow the user to access easily and understand the information in the databases. The appearance of the working environment the **FrontEnd** creates is similar to that of the commercial operating system "Windows". The Distributed System can be installed on an IBM compatible personal computer with these recommended minimum specifications:

- o 386SX 16 mhz processor
- o 2 megabytes of memory
- o VGA graphics monitor
- o Mouse
- o 20 mb of available hard disk storage

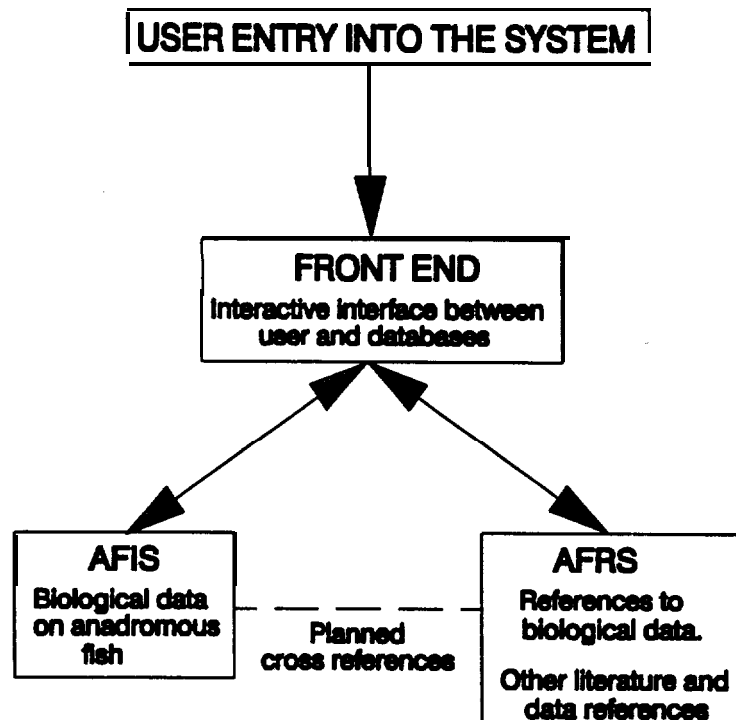


Figure 2. Components of the Distributed System.

In addition to supporting user access to the databases, the **FrontEnd** allows users to query databases and create subsets defined by type of information, species, location, or other criteria. User-created data subsets can be written to a file to be used in subsequent analysis, or sent to a printer to obtain a paper copy. Requests for the Distributed System should be directed to the CIS project manager, Stan Allen, at Pacific States Marine Fisheries Commission (PSMFC) by calling (503) 650-5400.

Anadromous Fish Information System

AFIS contains quantitative data in three applications: A **damcount** database, an escapement database, and a biological (stock summary report) database (Figure 3). The **damcount** database contains recent and historical counts of salmon and steelhead migrating upstream past 12 main stem dams in the Columbia River system (Figure 4). The data are organized by year, dam, and species or race. Dam counts for salmon are separated into numbers of jacks and adults.

The escapement database contains recent and historical information on wild or

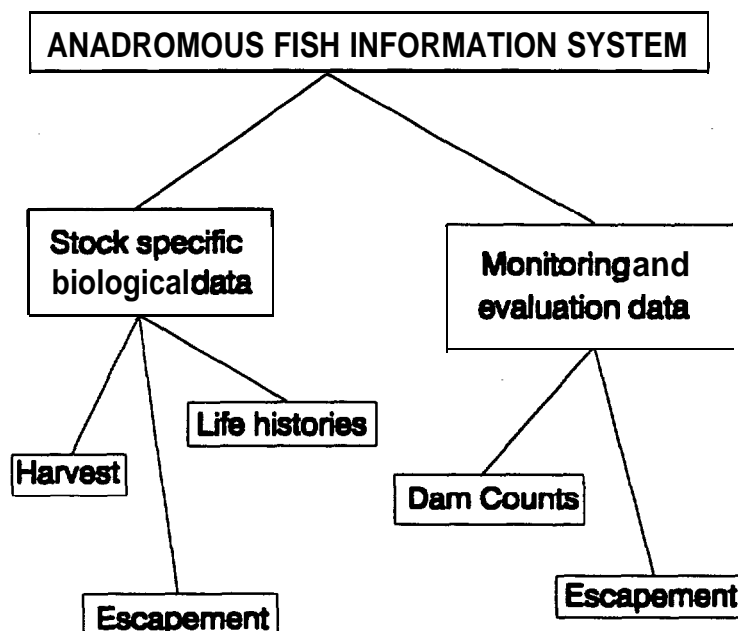


Figure 3. Databases in the Anadromous Fish Information System.

naturally produced adult returns to spawning areas in the Columbia River Basin for steelhead and 5 species of salmon. The information spans over 50 years for some species. Data from over 580 river reaches of the Columbia River system are included. The **dataset** was developed by Washington Department of Fisheries (WDF) and Columbia River Inter-Tribal Fish Commission (CRITFC), and updated by Northwest Power Planning Council (NPPC). Estimates of total escapement to spawning areas are often available in this **dataset**, but many times the information is presented as an index measured in redds per mile, fish per mile, peak escapement, or redd counts. To evaluate changes on a system wide basis, care should be taken to identify properly the methods or indexes used to quantify escapement before aggregating the data.

The biological database contains information on returns of adult salmon and steelhead to **subbasin** of origin, tribal and sport harvest, and spawner escapement. Life history information is also available including age composition and length at age. The information in this application was compiled from the stock summary reports prepared in an earlier phase of the CIS project (Hymer et al. 1992, Keifer et al. 1992, and Olsen et al. 1992): Additional biological information not yet incorporated into the Distributed System can be accessed through copies of the stock summary reports. Methods, data

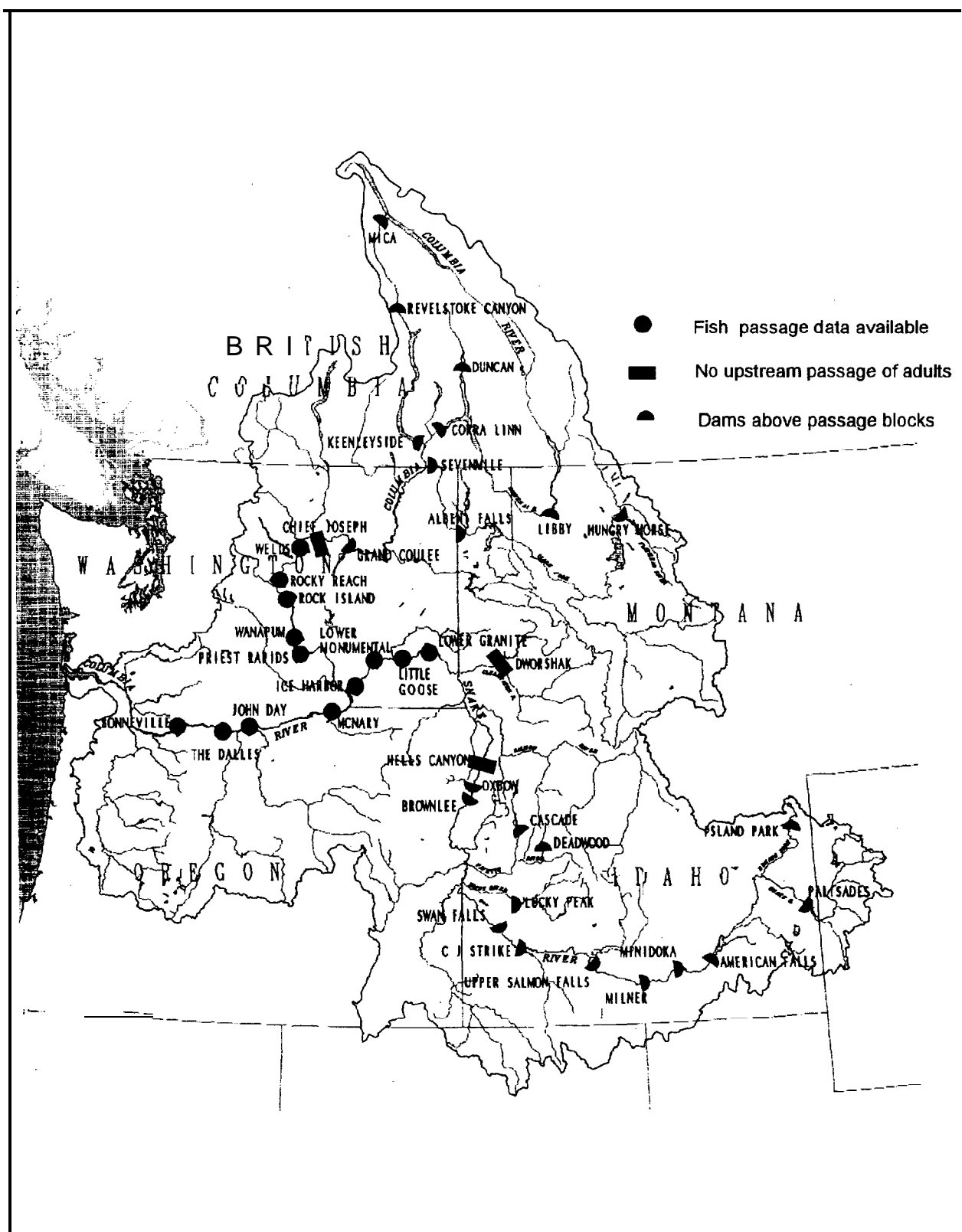


Figure 4. Hydroelectric projects in the Columbia River system.

qualifiers, and data sources can also be obtained from the published stock summary reports.

Anadromous Fish Reference System

AFRS includes two **applications** containing information on sources of data (Figure 5). One application, the data catalog, contains information about structured and informal **datasets** created during past and ongoing studies of anadromous salmonids in the Columbia River Basin. The other application, the literature catalog, contains citations of published and unpublished literature on anadromous fish. A third application provides information on past and ongoing projects conducted in the Columbia Basin and will be included in future releases of the Distributed System.

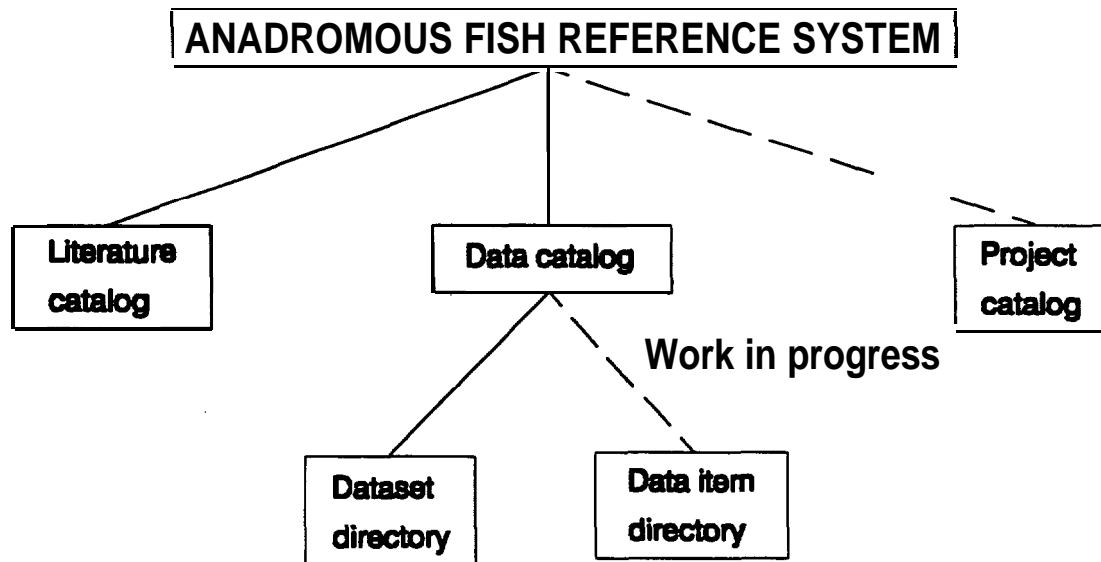


Figure 5. Databases in the Anadromous Fish Reference System.

The **dataset** directory lists names of **datasets** and a brief description of the contents of the datasets. Much of the information currently available in the **dataset** directory is based on earlier CIS research (O'Connor et al. 1993). The **dataset** directory lists the geographic areas, species, and time period to which a **dataset** pertains. **Datasets** which are available on electronic media are identified, and a contact person and telephone number are listed. Currently, 93 structured **datasets** are described.

The literature catalog application is structured to display information typically found in a literature citation including publication title, author, year, and page numbers. The application is designed to allow queries by keyword or author. Queries defined by the user

are also supported. Currently, 607 published and unpublished documents are listed in the literature catalog, including the references cited in the stock summary reports.

Bulletin Board Service

The electronic bulletin board system (CISNET) has been invaluable as an expedient means of information exchange between members of the CIS development team. Work products, data for the Distributed System, and other communications have been distributed to CIS members at remote locations through CISNET. CISNET also serves as a communication forum for other Columbia Basin activities including the Grande Ronde model watershed project and work conducted by BPA's scientific review group (SRG).

CISNET is accessible to users with a PC, telephone, and Hayes compatible modem. The bulletin board supports speeds of 300, 1200, 2400, and 9600 bps, with file transfer protocols including Xmodem, Ymodem, Zmodem, and Kermit. Use is currently free of charge and available to all Columbia Basin fishery professionals. Once logged on, the system is menu driven allowing users to send messages or files to other CIS members and receive messages or files from other users. In addition to use by individuals, CISNET can be made to accommodate special group needs for a separate working area within the bulletin board. CISNET is available for use 24 hours per day. Peak use occurs between 8:00 am and 5:00 pm on weekdays.

CISNET is presently administered by CRITFC. Questions regarding use of the bulletin board should be directed to Phil Roger, the systems operator at CRITFC, by calling (503) 731-1301.

Information Services

CIS provides additional information services not currently provided by the electronic data sources. Paper copies of reports cited in AFRS can be located by directing requests to the CIS librarian Ann Roseberry at (503) 731-1302. CIS also provides other custom search services. If reports are unavailable, referrals to other sources can be made. Copies of stock summary reports, which contain anadromous **salmonid** life history information not available in AFIS can be ordered by calling the CIS project manager at (503) 650-5400.

Because the people administering CIS represent numerous fisheries organizations, information requests that cannot be filled directly by CIS can often be accommodated through referrals to the people who do have the requested information, or are involved in projects designed to acquire that information. CIS can help fill some information requests by coordinating information retrieval from agency or regional databases. Examples of information not currently available in the Distributed System, but accessible through CIS upon request, include coded wire tag recovery information maintained by PSMFC; information on geographic distribution of **salmonid** species in the Columbia River Basin maintained by NPPC; data on the commercial harvest of salmonids in the main stem of the Columbia River maintained by Oregon Department of Fish and Wildlife (ODFW); and

physical, operational, and administrative information on hatchery facilities in the Columbia Basin.

ADMINISTRATION

The CIS administration consists of a project manager, a steering committee, a software development team, a librarian, and a data manager for each state in the Columbia River Basin (Figure 6). The project manager administers contractual obligations to BPA, oversees the steering committee, and currently coordinates regional information gathering activities, filling information requests, and CIS project development. The steering committee includes a representative from each agency participating in CIS. At present, the steering committee is an 11-member body with participants representing PSMFC, BPA, NPPC, U.S. Fish and Wildlife Service (USFWS), Washington Department of Wildlife (**WDW**), WDF, Idaho Department of Fish and Game (IDFG), CRITFC, ODFW, Shoshone-Bannock Tribes (**ShoBan**), and National Marine Fisheries Service (NMFS; Table 1). The steering committee works cooperatively on CIS project development and coordination.

The software development team, CIS librarian, and state data managers work cooperatively to develop, maintain, and update the Distributed System (Table 2). The CIS librarian also maintains and expands the CIS document collection and document procurement network. The state data managers are the key contacts for data requests pertinent to each state's jurisdiction.

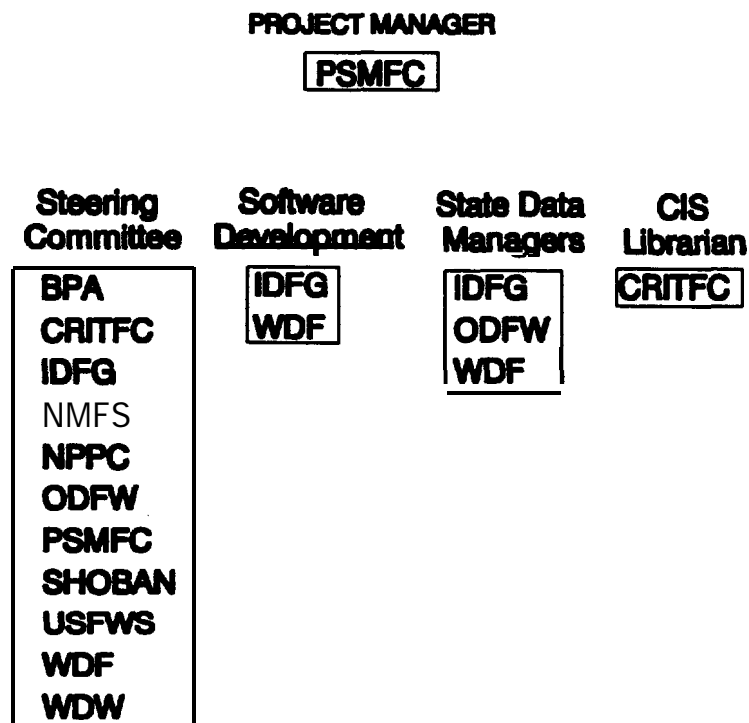


Figure 6. Lead agencies participating in the Coordinated Information System.

Table 1. Members of the CIS Steering Committee

<u>Name, Agency, and Address</u>	<u>Telephone</u>	<u>Facsimile</u>
Stan Allen Pacific States Marine Fisheries Commission 45 S.E. 82nd Drive, Ste 100 Gladstone, OR 97027-2522	(503) 650-5400	(503) 650-5426
Duane Anderson Northwest Power Planning Council 851 SW Sixth, Ste 1100 Portland, OR 97204	(503) 222-5161	(503) 795-3370
Katherine Beale Bonneville Power Administration P.O. Box 3621-PJSP Portland, OR 97208-3621	(503) 230-7418	(503) 230-33 14
Ray Beamesderfer Oregon Department of Fish and Wildlife 17330 SE Evelyn Street Clackamas, OR 97015	(503) 657-2036	(503) 657-6823
Travis Coley U.S. Fish & Wildlife Service 9317 Hwy. 99, Ste A Vancouver, WA 98665	(206) 696-7888	(206) 696-7968
Jerome Hansen Idaho Dept. of Fish & Game 600 S. Walnut, P.O. Box 25 Boise, ID 83707	(208) 334-3098	(208) 334-2114
Dick O'Connor Washington Dept. of Fisheries P.O. Box 43151 Olympia, WA 98504	(206) 902-2778	(206) 902-2980
Phil Roger Columbia River Inter-Tribal Fish Commission 729 N.E. Oregon, Ste. 200 Portland, OR 97232	(503) 731-1301	(503) 238-3557
Mike Rowe Shoshone-Bannock Tribes P.O. Box 306 Fort Hall, ID 83203	(208) 238-3748	(208) 238-3742
Steve Stone National Marine Fisheries Service 911 N.E. 11th Avenue, Room 620 Portland, OR 97232	(503) 230-23 17	(503) 230-5435

Table 2. Members of the CIS development team.

<u>Name/Address</u>	<u>Telephone</u>	<u>Facsimile</u>
<u>Project Manager:</u>		
Stan Allen Pacific States Marine Fisheries Commission 45 S.E. 82nd Drive, Ste 100 Gladstone, OR 97027-2522	(503) 650-5400	(503) 650-5426
<u>Software Developers:</u>		
Doug Reece/Daniel King Idaho Dept. of Fish & Game 600 S. Walnut , P.O. Box 25 Boise, ID 83707	(208) 334-2810	(208) 334-2114
Larry Brown Washington Department of Fisheries P.O. Box 43151 Olympia, WA 98504-3 15 1	(206) 902-2798	(206) 902-2980
<u>State Data Managers:</u>		
Ray Beamesderfer Oregon Department of Fish and Wildlife 17330 SE Evelyn Street Clackamas, OR 97015	(503) 657-2036	(503) 657-6823
Jerome Hansen/Charlie Petrosky Idaho Dept. of Fish & Game 600 S. Walnut , P.O. Box 25 Boise, ID 83707	(208) 334-3098	(208) 334-2114
Dick O'Connor Washington Dept. of Fisheries P.O. Box 43151 Olympia, WA 98504	(206) 902-2778	(206) 902-2980
<u>Librarian:</u>		
AM Roseberry Columbia River Inter-Tribal Fish Commission 729 N.E. Oregon, Ste. 200 Portland, OR 97232	(503) 73 1-1302	(503) 238-3557

CIS Distribution Policies

Distribution of information will inevitably be limited in some cases due to the availability of information, the cost of information retrieval or collection, or time constraints. The people administering the CIS will fill all information requests as quickly and completely as possible. However, as the project develops, some administrative policies may need to be established that guide the delivery of information to those who request it. A framework of distribution guidelines that may affect the availability of information will need to be established and agreed upon by each participating agency in the steering committee and might include:

1. Copyright laws may limit the ability to fill requests for paper documents. The cost of duplication of documents may limit the ability to fulfill requests for some reports.
2. CIS is neither intended to analyze or interpret information, nor to make recommendations on the management of natural resources.
3. Information provided by CIS on electronic media is compiled from an assortment of published and unpublished literature and data sources. The data were carefully compiled to minimize errors due to transcription, and individual data elements or groups of data will be referenced to their original source in later releases of the Distributed System. CIS is not liable for the accuracy of data or the interpretation of information.
4. No charges for services have been considered to date. However, if the volume of information requests becomes high enough, some fee structures may need to be implemented for certain services, such as duplication costs or use of the bulletin board service.
5. The Distributed System has been carefully designed so damage will not occur to a user's computer hardware, stored information, or software. However, CIS cannot incur any liability if a user's computer information or hardware were damaged through the use of the Distributed System.

While some of these potential policies may appear restrictive, the people administering CIS will continue to provide information on anadromous fish and to identify where additional information can be obtained -- a task which in itself can be very time consuming for those conducting research on Columbia Basin anadromous fish.

PLANNED SERVICES AND FEATURES

Several improvements to services provided by CIS are currently being made and are scheduled for completion by the end of 1993. Additional features have been identified that will be developed and tested during FY 1994.

Ongoing System Improvements

The primary improvements presently being made to CIS are to cross reference data in AFIS with text references in AFRS and to add additional types of data to AFIS. At present, the references to data compiled from the stock summary reports are not linked to that data. Consequently, data in AFIS which are qualified in some way because of collection methods or assumptions made cannot be identified. Also, the original documents from which data were obtained cannot be identified by those seeking further clarification.

Ongoing work to complete the AFRS data catalog also includes adding a data item directory. The data item directory contains descriptive keywords that are linked to information sources including informal collections of information on anadromous salmonids in the Columbia River Basin. Similar to the AFRS data catalog that contains information on structured datasets, the AFRS data item directory provides contacts and descriptions for informal sources not compiled in the data catalog or literature catalog. Other compiled information that will be added to the Distributed System includes descriptions of Columbia Basin research and management projects that have been or are being conducted. This information includes descriptions of the objectives and scope of the projects and the agencies involved.

Additional biological information has been compiled, but not yet incorporated into AFIS. This information includes life history data contained in the stock summary reports, data on commercial harvest of salmonids in the mainstem of the Columbia River Basin, recoveries of fish that were coded wire tagged, and information on releases of hatchery produced anadromous fish.

Planned System Improvements

Features planned for incorporation into CIS during FY 1994 include updating existing databases in the Distributed System, adding new types of information to the Distributed System, and enhancing the reporting capabilities of the FrontEnd. New types of information that may be added to AFIS include hatchery operations information, quantitative habitat information, and life history information on resident trout. References for this information, as well as other unpublished or published documents on anadromous salmonids in the Columbia River Basin, will continue to be added to AFRS. Information on anadromous fish in river systems outside the Columbia River Basin might also be added to the existing Distributed System databases.

Potential improvements to the FrontEnd will be in response to user feedback. The reporting capabilities of the system may be expanded to include the ability to summarize numerically or graphically data to identify numeric means, ranges, functions, or time series.

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